



TRANS/CIRCUITS, Inc.

3509 CARLYN SPRING ROAD • FALLS CHURCH, VIRGINIA 22041 • PHONE: (703) 820-6405

May 30, 1984

Mr. Mohammad R. Habibi
BUREAU OF HAZARDOUS WASTE MANAGEMENT
Commonwealth of Virginia
11th Floor Monroe Building
101 N. 14th Street
Richmond, VA 23210



REF: Your Letter April 24, 1984

Dear Mr. Habibi:

I am enclosing a draft of our Contingency Plan and our closure plan for your records. I would appreciate your comments before I send this contingency plan to the local agencies. Your request for financial assurances has been sent with the appropriate pages of instructions and sample forms from the Hazardous Waste Management to John Flaherty, Assistant Treasurer of TRANSITRON, our corporate parent company for response. He can be reached at (617) 933-9640.

I am also enclosing our waste analysis procedures which are used to verify the contents of each drum of material generated here for disposal at a hazardous waste site. I would again like to emphasize that where we generate a hazardous waste for disposal as a byproduct of printed circuit board manufacturing; we are not a hazardous waste storage site. All material generated is removed from the facility within 90 days using the required manifests.

With regard to training we are taking a portion of our monthly safety meeting to discuss and conduct hazardous waste training which will be documented and have recently added a chemical engineer to our staff who will be responsible for our hazardous waste and environmental control programs.

Yours,

Theodore A Edwards

Theodore A. Edwards
Vice President
Engineering

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Enclosures

CONTINGENCY PLAN FOR HAZARDOUS MATERIALS
& HAZARDOUS WASTE CONTROL IN THE
EVENT OF ACCIDENTAL RELEASE OR SPILLAGE

Prepared by T.A. Edwards

Revision 29 May 1984

HAZARDOUS MATERIAL SPILL CONTROL PLAN

CHEMICAL EMERGENCIES

Section I. General Plan

A. Objective

The objective of this instruction is to provide a chemical emergency plan for the handling of all emergencies involving chemicals, both of a toxic and hazardous nature including hazardous waste (solvent, oil, gases, acids, bases). This contingency plan is required by Virginia law.

B. Scope

A chemical emergency refers to the release of any material (gas, vapor, fume, liquid or solid) which may pose a hazard to life or property. All releases shall be considered potentially hazardous. Although a release generally refers to a spill or leak, this plan covers all types of releases whether it be by spill, leak, decomposition of another chemical, incompatibility reaction or breakdown due to fire. For ease of communication, the terms "chemical emergency", "spill" or "leak" may be used interchangeably in this plan.

C. Structure

The supervisor shall be responsible for evacuation of all personnel from any problem area until the problem can be evaluated. Overall responsibility for administration and implementation of this plan shall be assigned to Engineering personnel. The handling of all spills shall be performed by Engineering personnel and Maintenance. All individuals who handle spills shall be trained in procedures for the clean-up and disposal of spills.

D. Equipment

A spill cart and accessories shall be provided solely for the use in cleaning up spills and shall be located in the warehouse.

Section II. Reporting Procedure

A spill once observed must be reported immediately so that prompt action can be taken. The reporting procedures for both normal operations and weekend or holiday operations are as follows:

A. First Shift

Spills occurring during first shift shall be reported to Emergency Coordinator.

B. Second Shift

Spills occurring during second shift shall be reported to the shift supervisor and shift operations manager and to the emergency coordinator.

C. During Weekends and Holidays

Spills occurring during non-routine working hours shall be reported to Bruce Cohen or designated person. Efforts shall be made to contact the personnel at their homes when they are not in the plant. If unable to contact these individuals, the operators shall attempt to contact their immediate supervisors or other personnel functional for parts of this plan. Appendix I contains emergency telephone numbers.

Section III. Action Taken By Emergency Personnel

Chemical emergencies range in hazard severity and as such each situation must be assessed and action taken accordingly. For this purpose, two types of emergencies are identified and classified as code 1,2 chemical emergencies. The supervisor shall make the initial assessment verified by process engineering or the engineering chemist regarding severity.

- A. Code 1: Routine spill or leak posing no significant threat to employee or community health and safety, and to company property. Spill is of a low volume and/or hazard potential.

Code 2: Serious spill or leak posing a significant threat to employee health and safety, and/or to company property. Spill is of a high volume and/or hazard potential. Evacuation of major areas of the plant is necessary and potential for injury is high.

B. First Shift Response

A Code 1 emergency shall be handled by the following individuals:

Emergency Coordinator
Operators
Chemical Make Up
Engineering Personnel

The first engineering personnel at the scene shall quickly assess the hazard and determine if it is a Code 2 emergency.

If a Code 2 emergency is designated, the following personnel shall be informed immediately:

Emergency Coordinator
Engineering Personnel
Maintenance Personnel
Plating Supervisor

C. Second Shift Response

As Code 1 emergency shall be handled by the following individuals without further involvement of additional emergency personnel:

Emergency Coordinator
Second Shift Supervisor

D. Weekend and Holiday Response

For routine pipe leaks which pose little danger, the Supervisor shall arrange to repair the problem. For Non-routine emergencies of a hazardous nature when chemical emergency personnel are unavailable, the Supervisor in charge will call the emergency coordinator. Action to be taken will be determined based on their assessment of the emergency.

Section IV. Handling, Cleaning-Up and Disposal Procedure

A. Emergency Action

1. Evacuate all personnel from the contaminated area and make every effort to determine that no one has been overcome and remains in the area. Conduct search and rescue.
2. Set up lines of evacuation. To prevent employees from wandering into an evacuated area, "Danger - Spill - Keep Out" signs shall be strategically posted. Roping or taping off may be required in large open areas.
3. Isolate all spills and, if outside, prevent run-off or leakage.
4. On first shift, the area shall not be reentered by operating personnel until evaluated by the supervisor and engineering personnel and all-clear. On other shifts, the decision to reenter an area (All Clear) shall be made only by personnel specifically trained.

B. Personal Protective Equipment

X-shall be used

1. The following protective equipment are required for all clean-ups involving spills of hazardous gases or liquids. These requirements apply specifically to all pumping, diluting or disposal operations.

- (X) Gloves - rubber
- (X) Shoes - rubber
- (X) Respirator - chemical cartridge (full face)

2. The following protective requirements apply to handling spilled toxic solids or powders which generate considerable dust.

- (X) Gloves - rubber
- (X) Shoes or boots - rubber
- (X) Goggles - chemical
- (X) Respirator - dust
- (X) Coveralls and hood - disposable

3. Respiratory Protection

- a. Respiratory protection shall be worn when there is a possibility of exposure to toxic dusts, mists, fumes, vapors and gases.
- b. Routine-use respirators shall be authorized only for pumping of toxic materials from one carboy to another, or clean-up of minor spills in a well ventilated area.

C. General Control Principles

1. Never mix materials.
2. Acids should be diluted only after neutralization. Never add water to acid - a violent reaction could occur.
3. When transferring a material from a damaged carboy or container, always transfer to either a cleaned container (that has been thoroughly washed) or a similar container which has contained the same material. Be positive that the new container is uncontaminated, in good physical condition, and labeled properly. "Waste Material" labels are available for this purpose.

4. Never transport materials in an open container.
5. Thoroughly wash and clean all equipment after use in handling a spill.
6. When handling flammable solvents, be sure there are no open flames or spark-producing equipment in the vicinity (within 50 feet).
7. Never dispose materials unless familiar with Waste Treatment requirements. Large quantities of materials for disposal should always be brought to the attention of the Waste Treatment plant prior to disposal.
8. Exercise caution when vacuuming volatile materials. Irritating and/or hazardous vapors or dusts may be generated and dispersed into the area.
9. If hazardous vapors are being generated, try to remain upwind from the source.
10. If a spilled liquid is spreading into adjacent areas or running down, stop the flow by diking with sand.
11. Leaking drums may be quickly contained by transferring to spare drums.

Section V. First Aid

- A. Whenever a person is injured by a spilled material, flood the affected areas with copious amounts of water and then notify the Personnel Department. All accidents shall be brought to the attention of this department. The Personnel Department shall also be informed of the special chemical or tradename of the material which caused the injury. Personnel or the Emergency Coordinator may contact fire or other outside support if needed.
- B. If caustic, oxidizing or acidic solutions are brought into contact with the body or eyes, remove any clothing and immediately wash the area with copious amounts of cold water. There are showers and eye wash fountains located in all chemical areas for this purpose.
- C. If toxic fumes are inhaled, the person shall be taken to a place where he can breathe fresh air. If breathing has stopped, artificial respiration should be started immediately.

Section VI. Location and Inspection of Equipment

Equipment locations are in Appendix 2. A program of inspecting all equipment to insure its readiness shall be implemented consisting of the following:

1. Each month inspections of the spill handling equipment will be completed. Results will be presented to and reviewed by the safety committee at its monthly meeting.
2. Checklists for each type of inspection shall be completed and maintained in a log.
3. All discrepancies noted during the inspections shall be brought to the attention of the Emergency Coordinator.

Section VII. Spill Documentation

All Spills shall be documented by the Emergency Coordinator using a "Spill Report" form. The completed report shall be distributed to the Process and Industrial Engineering and Safety Department.

Section VIII. Telephone Listing

A telephone listing of individuals responsible for parts of this plan shall be periodically updated and is included as Appendix 1.

Section IX. Clean Up - Hazardous Waste

The emergency coordinator shall under emergency conditions be authorized to commit funds specifically for use in control/clean-up of hazardous waste without prior review. This authority will exist so long as the emergency exists and will terminate at the end of the emergency at which time all expenditures will be documented through normal material requisitions confirmed through the purchasing department.

GENERAL PROCEDURES
CHEMICAL EMERGENCIES

EMERGENCY ACTION ! ! !

Evacuate Area. Search & Rescue.

Keep Unnecessary people away.

Stop leak if without risk.

Sandbag all drains (outside) in vicinity.
Prevent run-off.

Isolate hazard area - post "SPILL" sign.

Keep upwind where possible. Watch for wind change.

Wear protective equipment as required.

Goggles
Gloves
Acid Shoes
Apron, PVC wet wear or disposables
Respirator
Follow specific instructions

HEALTH

Contact may cause burns to skin and eyes.

May be harmful if inhaled. Wear respirators if necessary.

Do not touch spilled materials.

If a vacuum cleaner is used - remember - hazardous vapors may be generated. Wear respiratory protection and/or connect vacuum to an exhaust system.

Use exhaust blowers, large fans or smoke ejectors as needed to clear air.

Never add water to acid. Do not mix materials.

Evaluate community hazard if released to atmosphere.

FIRST AID

Remove to fresh air.

If necessary use emergency shower and eye wash.

Remove contaminated clothing while under shower.

Transport to Medical and notify as to type of exposure, etc....

DISPOSAL AND ENVIRONMENTAL CONTROL

Dike all drains in area with sand.

Prevent run-off from reaching floor drains.

Retain waste in drums and store in drum storage area. Do not dispose unless absolutely positive of proper disposal site.

Leaking drums transfer to clean drum and label. Clean area with absorbent.

SPILL HANDLING EQUIPMENT

Clean and restore all equipment when complete!

SPILL DOCUMENTATION

Document all spills with "SPILL REPORT".

INSPECTION

Conduct weekly and monthly inspection.

SPILL CLEAN-UP

Acid, caustic
oxidizer, cor-
rosive

Sprinkle with neutralizer until bubbling
reaction ceases.
Collect in drum with vacuum or shovel -
Cover, label and store in drum storage area.

Misc. Chemical

Vacuum or absorb with absorbent. Collect in drum -
cover, label and store in drum storage area.

Solvents (non-
flammable)

Vacuum or absorb with absorbent. Connect
vacuum to exhaust system when possible.
Due to viscosity, solvent sludges may require
collection by high suction pumps and vacuums
or shoveling. Do not use absorbents.
Collect all spills in drums - cover, label
and store in drum storage area.

Flammables &
Combustibles

Prohibit open flames, sparks or ignition
sources from area.
If spill occurs in flammable cabinet,
flush to drain.
Otherwise - absorb with absorbent.
Due to viscosity, oils and flammable sludges .
may require collection by shoveling. For large
oil spills use sand as absorbent.
Collect all spills in drums - cover, label
and store in drum storage area.
Spills of flammable inks, soldermask, etc...
should be collected by shoveling.

SPILL REPORT

DATE: _____ TIME: _____ LOCATION: _____

MATERIAL SPILLED: _____

ESTIMATED VOLUME: _____

DID ANY OF THE SPILL ENTER A DRAIN, ETC.,? _____

METHOD USED TO CLEAN UP SPILL: _____

PROBABLE CAUSE: _____

CORRECTIVE ACTION: _____

HAS THE TRUCK AND ALL EQUIPMENT BEEN CLEANED AND RESTORED? _____

LIST ANY EQUIPMENT IN NEED OF REPAIR/REPLACEMENT: _____

COMMENTS ON ANY ASPECT OF SPILL: _____

SIGNED: _____

APPENDIX II

LOCATION OF EQUIPMENT & MATERIALS FOR CLEAN UP

1. Absorbent (TC#22-055-074-0) Minimum stock 100 lbs. in stockroom
2. Wet or Dry Vacuums - 3
 Central Mechanical Room - 2
 Personnel Storeroom - 1
3. Cart - Plating Area
4. Drum Pump - Waste Treatment Area
5. Floor Sump Pump - Maintenance Area
6. Multigas Detector - Process Engineering Office, Bruce Cohen's Desk

At present, although categorized as a hazardous waste storage site, TRANS/CIRCUITS, INC., accepts no material from outside sources and stores only material generated internally as a product of its chemical processes and waste treatment facility. All facility items are such that with proper cleaning using conventional methods such as soap and water they can become non-hazardous.

At present, the closing of this facility as a production site for manufacture of printed circuits must be considered as remote, however; in compliance with the law this plan has been prepared.

The purpose of this plan is to ensure that all hazardous waste management facilities are closed in a manner that protects human health and the environment and leaves the facility such that post closure maintenance and control is not required. The closure plan will include removal from the facility of all hazardous waste using the same procedures as now in place. Presently there are no hazardous wastes stored in the facility past 90 days and the materials being generated are disposed of by manifest to an approved waste site. Upon closure the following timeplan would be followed.

The waste treatment facility would continue to operate until all chemicals and materials within the plant have been treated.

Sludges, residues and chemical concentrates would be drummed, analyzed and identified. All tanks processing equipment would be emptied and cleaned. The waste treat facility would then be emptied and cleaned.

After all waste has been accumulated a manifest will be prepared and the material removed. (90 days maximum)

Closure costs are estimated as follows:

100 approved drums @ \$37.00/drum	\$ 3,700
Labeling @ \$30.00 per hour for 10 hrs	300
Drum removal @ \$110.00/drum	11,000
Clean-up, decontamination at \$6.50/ hr 8 people 10 weeks	<u>20,800</u>
	\$35,800

HAZARDOUS WASTE STORAGE CLOSURE PLAN

Trans/Circuits, Inc.

3509 Carlyn Spring Road

Falls Church, VA 22041

Prepared by:

Theodore A. Edwards

Revision - 15 May 1984

WASTE ANALYSIS FORM

Date:

Technician:

[illegible]

APPENDIX I

EMERGENCY TELEPHONE NUMBERS

Emergency Coordinator

Bruce Cohen X32

(b) (6)

Talaat El-Hotiby X9

(b) (6)

Theodore Edwards X34

No Home Phone

Central Paging

X37

Chem Lab

X9

Personnel (Bruce Oyler)

X17

Plant Maintenance (Joe Brocato)

X30

Wet Line (Jim Kerr)

X42

(Don Reynard)

X14

Operator (Jeanette Stinnett)

X00

Processes (Mary Lynn Feltner)

X43

Environmental (Bruce Cohen)

X32

Engineering (Ted Edwards)

X34

Chemist (Talaat El-Hotiby)

X9

WASTE HAZARDOUS ANALYSIS PROCEDURE

1. Scope: This method covers all the information of hazardous waste (physical and chemical analysis) which must be known to treat, store, dispose.
2. Procedure: The following guidelines will be used for determining physical and chemical analysis of hazardous waste.

Type of Analysis	Parameters	Sample Handling Class	Measurement Technique Used
Physical	Specific Gravity	-	Hydrometer
	Color	-	-
	Odor	-	-
	Layer	-	Separation Funnel
Chemical	Ph	-	Meter, Ph
	Copper	Digestion	Atomic Absorption
	Lead	Digestion	Furnace/Flame
	Chromium	Digestion	Perkin Elmer
	Nickel	Digestion	Model 3030

3. Hazardous Waste Determination:

Based on the analysis results, the Engineering Chemist shall identify and define a name of hazardous waste and EPA waste code.